Project Status Report for: December 2000

Project Title: Ultra Low NOx Integrated System for Coal-Fired Power Plants

Project Number: 91890460 **Project Manager:** John Marion

Customer Name: U.S. DOE / Performance Projects **Project Leader:** Charles Maney

GOALS AND OBJECTIVES:

Develop low cost, retrofit NO_x control technologies to address current and anticipated, near term emissions control legislation for existing coal fired utility boilers. Specific goals include:

- Achieve < 0.15 lb/MMBtu NO_x for eastern bituminous coals
- Achieve < 0.10 lb/MMBtu NO_x for western sub-bituminous or lignitic coals
- Achieve economics at least 25% less than SCR-only technology
- Validate NOx control technology through large (15 MWt) pilot scale demonstration
- Evaluate the engineering feasibility and economics for representative plant cases
- Provide input to develop commercial guidelines for specified equipment
- Provide input to develop a commercialization plan for the resultant technologies

WORK PLANNED FROM PREVIOUS REPORT:

Task 3.3 – Combustion Testing and Cleanup

- Complete first combustion test period facility cleanup work; reconcile final test costs.
- Secure facility for winter / until initiation of second test week preparation activities.

Task 3.5 – Data Reduction and Analysis

- Continue first combustion test period data reduction and analysis
- Begin the generation of graphics and summarization of the test results in preparation for internal and external (DOE NETL / Advisory Panel) presentation and review.

Task 6 – Advisory Panel

- Make preparations for a second meeting of the Advisory Panel in January of 2001.

Task 8 – Project Management

- Hold a series of internal, ALSTOM Power meetings in December to review the project status and make recommendations for reconciliation of the budget short fall. Pending this work, a follow on meeting will then be held with DOE NETL personnel to review the project status, discuss recommendations for budget reconciliation, and come to an agreement as to the scope of work to be performed within the remaining funds.
- Scheduler issues will also be discussed, including developing recommendations for a revised second test period schedule to account for the previously agreed to one month delay in the execution of the first test period work.

ACCOMPLISHMENTS FOR REPORTING PERIOD:

Task 2.1 – Test Fuels Characterization

A sub-bituminous coal from the Powder River Basin was identified as a probable candidate for the upcoming second combustion test period in the BSF. A typical analysis of the coal is provided in Table 1. Logistics for procuring and transporting the coal to the Windsor site are currently being discussed with the coal company. Final coal selection / procurement will occur after the scope and schedule for the testing has been finalized with internal and external funding agencies, and reviewed with the Advisory Panel members.

Table 1 – Sub-Bituminous Coal Typical Analysis

Proximate	
VM	30.7%
FC	33.7%
FC/VM	1.10
VM, DAF	47.4%
Ultimate	
Moisture	29.6%
Hydrogen	3.4%
Carbon	48.8%
Sulfur	0.3%
Nitrogen	0.7%
Oxygen	11.5%
Ash	5.7%
Total	100.0%

Task 3.1 – Test Planning & Facility Preparation

A preliminary list of the tasks required to prepare the BSF for the next combustion test period was made in December. All project related facility preparations are on hold pending the resolution of the scope and schedule for the upcoming testing.

Task 3.3 – Combustion Testing and Cleanup

- *Complete first combustion test period facility cleanup work; reconcile final test costs.*
- *Secure facility for winter / until initiation of second test week preparation activities.*

Clean-up of ALSTOM Power's Boiler Simulation Facility after the combustion test period was essentially completed during the month of December. This included disposal of scrubber effluent, and general facility clean-up activities. The bottom ash from the BSF hopper will, however, not be disposed of until the slag from the furnace walls can be removed and added to the waste ash.

Task 3.5 – Data Reduction and Analysis

- *Continue first combustion test period data reduction and analysis*
- *Begin the generation of graphics and summarization of the test results in preparation for internal and external (DOE NETL / Advisory Panel) presentation and review.*

Data reduction and analysis associated with the testing of a medium volatile bituminous coal in ALSTOM Power's Boiler Simulation Facility (BSF) during the periods of October 29 through November 3, 2000 and November 13 through November 14, 2000 has largely been completed. Graphic generation will be continued in January in preparation for internal (ALSTOM Power) and external (DOE NETL / Advisory Panel) presentation in January, 2001.

Task 6 – Advisory Panel

- *Make preparations for a second meeting of the Advisory Panel in January of 2001.*

The second meeting of the Advisory Panel for this project has been scheduled for Wednesday, January 31, 2001 at ALSTOM Power's Windsor, Connecticut site.

Task 8 – Project Management

- *Hold a series of internal, ALSTOM Power meetings in December to review the project status and make recommendations for reconciliation of the budget short fall. Pending this work, a follow on meeting will then be held with DOE NETL personnel to review the project status, discuss recommendations for budget reconciliation, and come to an agreement as to the scope of work to be performed within the remaining funds.*
- *Scheduler issues will also be discussed, including developing recommendations for a revised second test period schedule to account for the previously agreed to one month delay in the execution of the first test period work.*

Internal meetings were held with the project team to reconcile the remaining project budget and scope. The recommendations of the project team will be subjected to further review by ALSTOM Power personnel before being presented to DOE NETL for approval. Pending internal and external work scope approval, the schedule for the remaining scope of the project work will be finalized. However it is anticipated that the second combustion test period in the BSF will be delayed from the originally scheduled February 28 date, consistent with the delays in the first combustion test work.

WORK PLANNED FOR NEXT REPORTING PERIOD:

Task 3.1 – Test Planning & Facility Preparation

- Generate preliminary test matrix for the second period of combustion testing in BSF.
- Finalize detailed list of tasks required to prepare BSF for next combustion test period.
- Select fuel(s) for use during the 2nd combustion test period in the BSF and begin the procurement process.